E. T. McHUGH.

MOLDER'S FLASK.

APPLICATION FILED AUG. 29, 1910.

974,983.

Patented Nov. 8, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

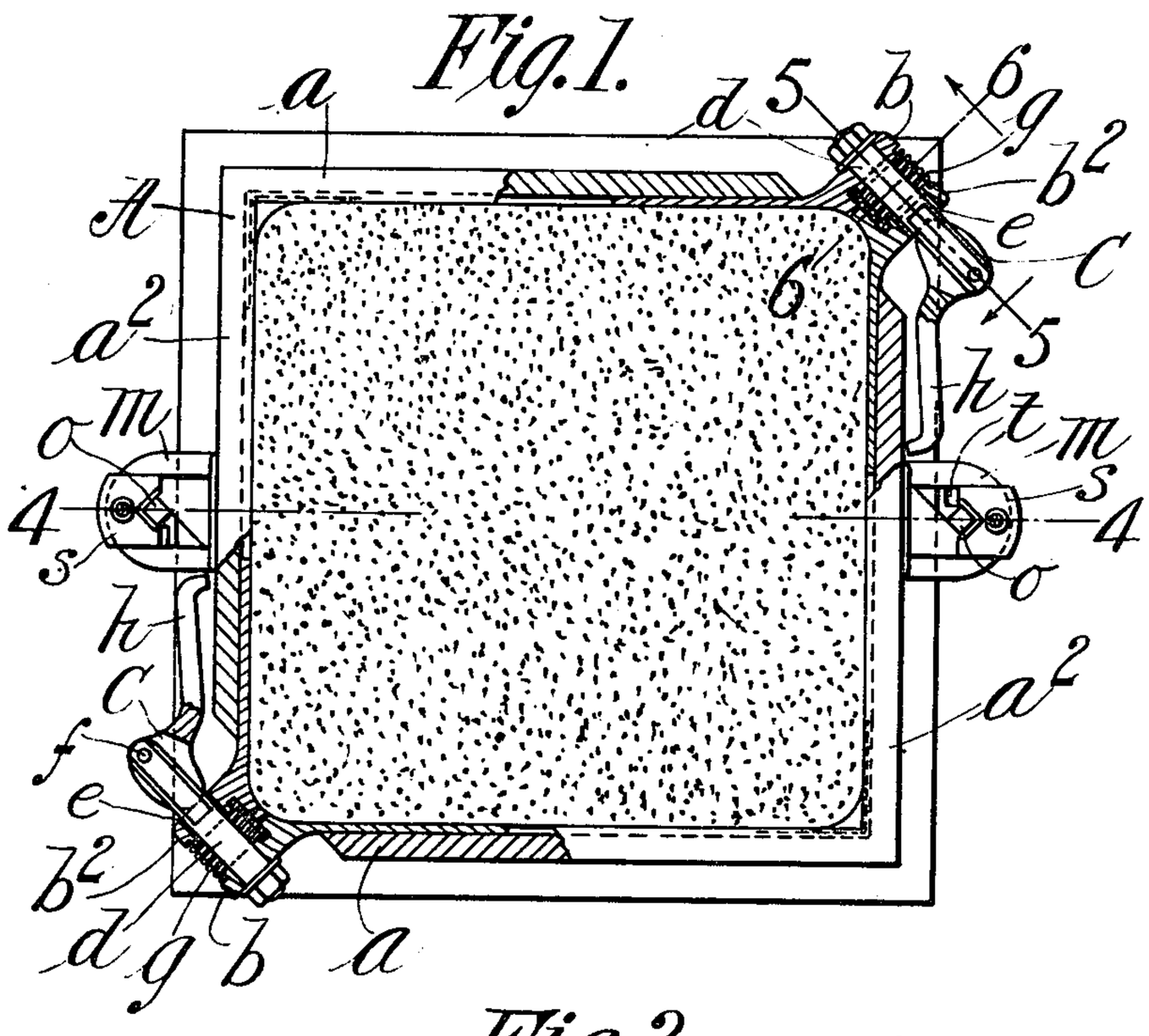
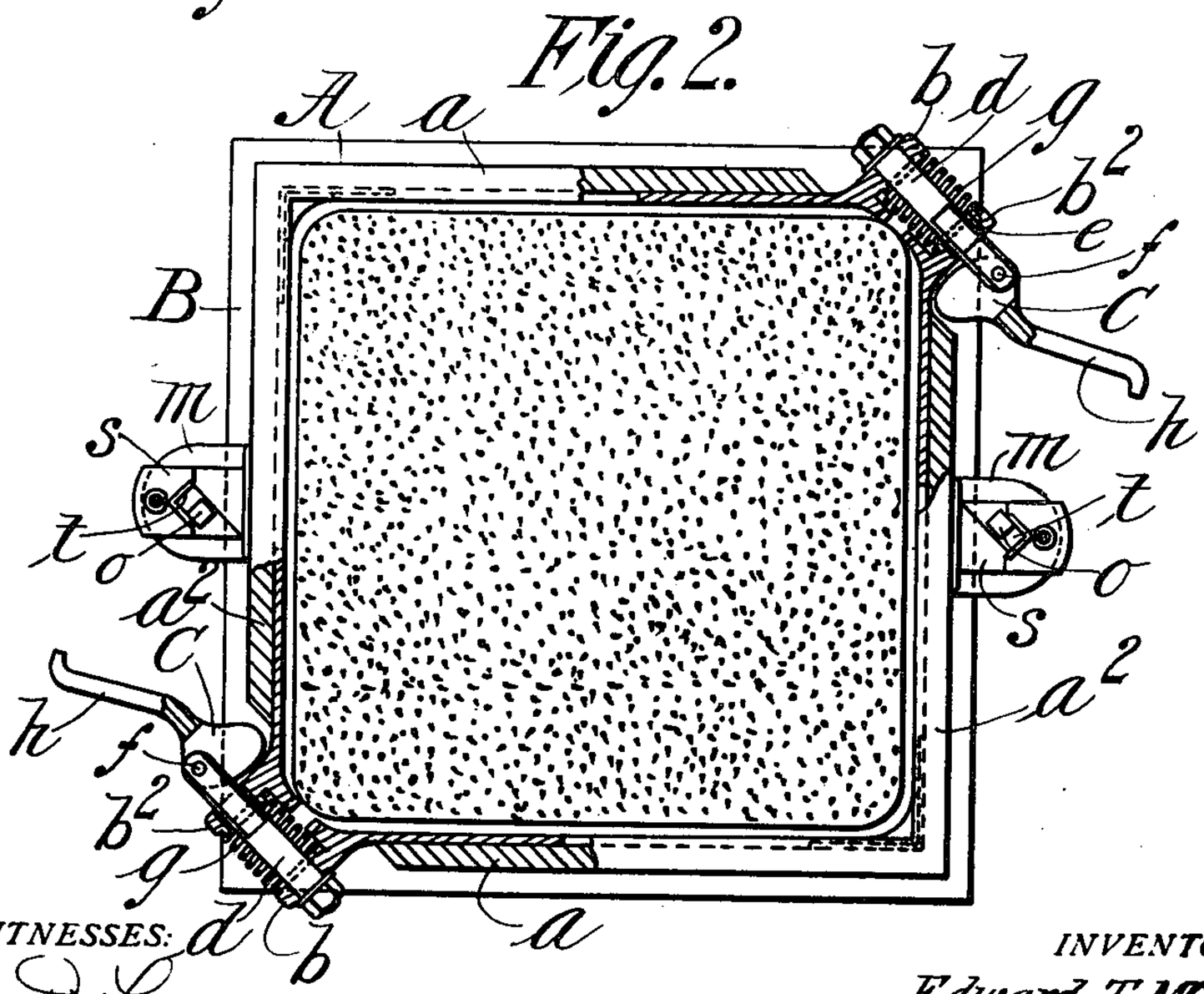


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

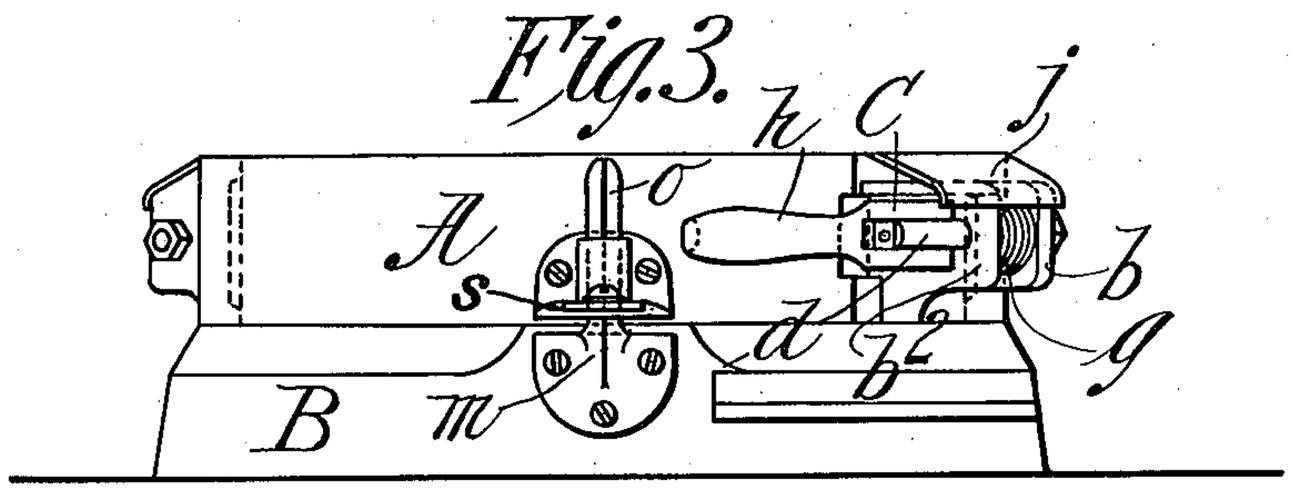


Fig. 4.

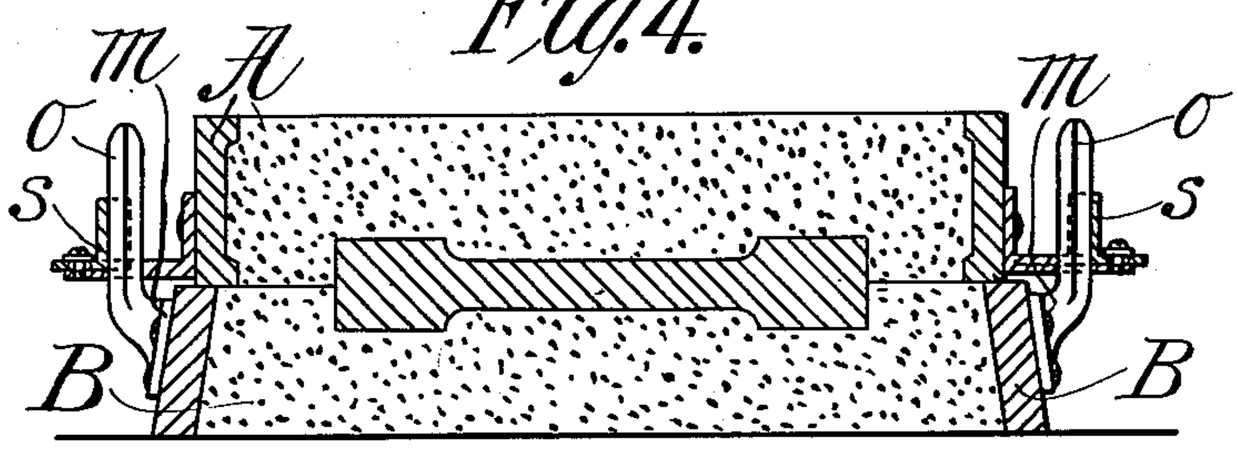


Fig. 5.

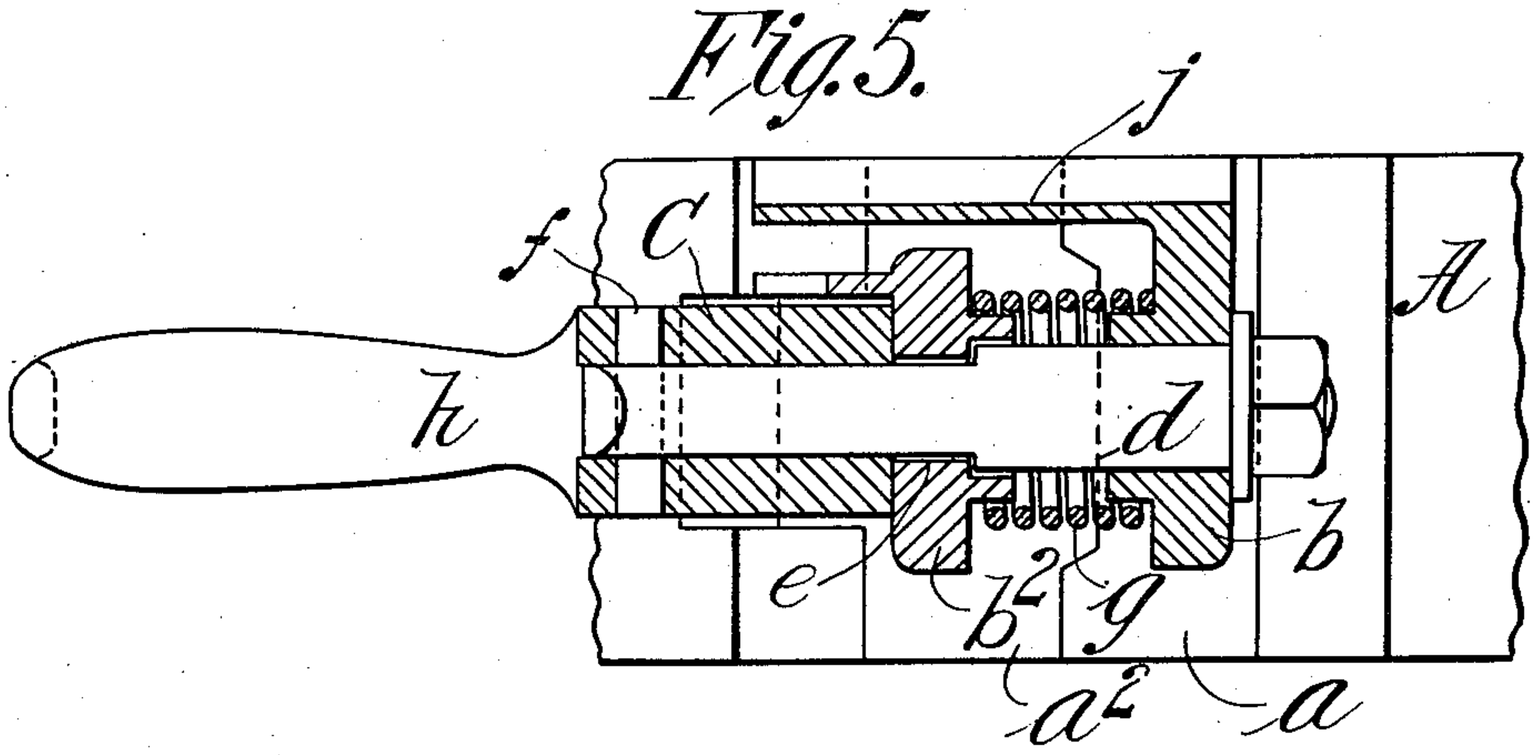
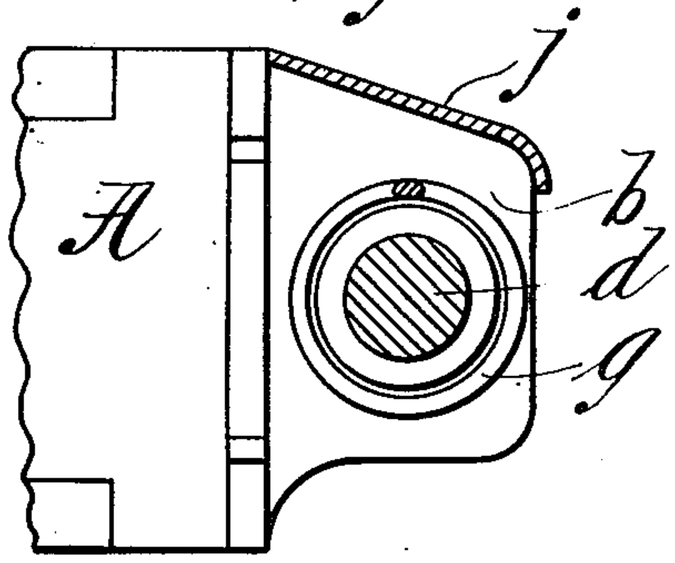


Fig. 6.



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UNITED STATES PATENT OFFICE.

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MOLDER'S FLASK.

974,983. Specification of Letters Patent. Patented Nov. 8, 1910.

Application filed August 29, 1910. Serial No. 579,570.

To all whom it may concern:

Be it known that I, EDWARD T. McHUGH, a citizen of the United States of America, and resident of Holyoke, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Molders' Flasks, of which the following is a full, clear, and exact description.

This invention relates to improvements in molders' flasks of the kind in which the rectangular frame or flask comprises two right angled portions arranged to form the boundaries of a rectangle and which portions are separable at their diagonally opposite corners whereby the said portions may have spread or expanded relations as desirable when the flask is to be removed from the sand mold produced therein,—it being understood that in flasks of the general character above referred to the separable portions are provided with locking or latching appliances at corners of the flask at which the separation takes place.

The object of this invention is to provide means at the diagonally opposite corners of the flask at which the separation of the right angular portions is acquired, which is of such improved construction as to permit most quickly contraction of the members and the holding of them locked in their contracted relations, and as occasion may require the release of the contracting and locking means together with automatic means, constituted by springs, for forcing the right angular portions of the frame or flask to separated or expanded relations in an appropriate degree.

The invention is fully described in conjunction with the accompanying drawings and is defined in the claims.

In the drawings:—Figure 1 is a plan view of the cope section of a flask, with some portions in horizontal section,—on which the present improvements are provided, the same being understood as in its position above the nowel or drag, this view showing the separable parts of the cope as contracted and locked in such condition. Fig. 2 is a view similar to Fig. 1 but showing the parts of the cope flask as unlocked and expanded. Fig. 3 is an elevation as seen at the right hand side of Fig. 1. Fig. 4 is a cross section on line 4—4, Fig. 1. Fig. 5 is a vertical sectional view on a larger scale as taken on line 5—5, Fig. 1, in the direction of the arrow. Fig. 6 is a cross sectional view in detail as taken on line 6—6, Fig. 1.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the cope section of a flask and B the nowel or drag.

The provisions comprised in the present invention are here represented as provided for the cope portion, although the same are equally well applicable on the drag.

The flask or frame-like section A is constituted by two right angular rigidly connected members a, a^2, having arrangements to form the boundaries of a rectangle; and the members a, a^2, have at their free ends lugs b and b^2 which extend obliquely outwardly, in suitable proximity with each other,—these pairs of lugs b, b^2 having their locations at the diagonally opposite corner of the flask which is made of the separable right angular portions as shown.

The obliquely extending lug b of each member a carries a rigidly affixed stud d which projects perpendicularly to, and beyond, the inner face of the lug b and transversely relatively to and beyond the companion lug b^2. In the present instance and in the preferred construction of the corner devices, the oblique lug b^2 has a perforation or aperture e therethrough, through which the extended portion of the stud d protrudes.

C represents a lever provided cam pivotally connected at f to the extremity of each stud d which has its location beyond and outside of each oblique lug b^2.

g g represent spiral springs which loosely encircle the studs d and have their locations between, and are in compression for reaction against, the pairs of oblique lugs b, b^2 so that when the parts are permitted for separation, by being left unrestrained at their diagonally opposite corners, the right angled portions will be thrown outwardly or expanded, as represented in Fig. 2, to leave the flask free and clear from the sand mold which had been formed therein.

When the lever extensions of the cams C C are swung from their open positions,—Fig. 2,—to their inwardly closed positions,—Figs. 1 and 5,—the cams by their impingements against the outer faces of the adjacent lugs b^2, b^2, produce drafts on the studs d d whereby they are drawn farther through the ap-

ertures *e* in the said lugs b^2, and whereby in a measure the lugs b^2 are forced toward the lugs *b* for closing the separable right angular portions of the flask.

In the closing movements of the parts the forces exerted thereon through the cams and studs are equalized or distributed so that the movements of the one right angular portion of the flask is mutual in respect to the movements of the other angular portion.

One of the lugs of each corner pair, as represented in Figs. 3 and 5, carries at its upper part a downwardly slanting guard wall *j* which extends in an overhanging manner across and over the top of the other corner lug and especially across and for covering the space between the two lugs *b*, b^2 in which the spring *g* has its place of occupancy,—the provision of this guard wall being efficient in the action of the flask appurtenances for preventing sand from entering between the lugs to impair or obstruct the movements of the working parts of the contracting and locking, and expanding means.

As particularly represented in the drawings, each combined cam C and handle lever extension is so constructed that the inner portion of the device is bifurcated whereby in effect the cam is one of upper and lower leaves, the same being joined at the heel by the inner end portion of the handle lever; and by this provision the extremity of each stud *d* which is connected to the cam ended lever by the pivot has its location between the two leaves of the cam and in the centralized plane of the lever, while a comparatively wide cam bearing against the outer face of the lug b^2 is acquired,—all to the end of an always efficient and satisfactory operation of the contracting and confining device.

The drag portion B of the flask has at opposite sides the usual brackets *m* which support the vertical outstanding guiding dowels *o;* and the cope A has the opposite outwardly extending guide plates *s* through apertures in which the dowels have engagements for the guidance of the one flask in relation to the other; but it will be noticed in the present instance that the apertures *t* in the guide plates *s* of the cope are arranged in oblique lines corresponding to the lines of inclination of the studs *d;* and by the provisions of these coacting dowels and peculiarly apertured guide plates the flask is rendered complete and satisfactory for its working purposes.

While the described improvements are available on the cope section of the flask, and has been most extensively used by me on this section, they are equally well applicable on the drag section; and the utilization of the improved devices is not restricted to any particular style or design of flask so long as the same has the boundaries thereof constituted by two right angled portions which are separable and have their arrangements such as to form a rectangular frame-like structure.

I claim:—

1. A flask comprising a pair of right angled portions arranged to form the boundaries of a rectangular flask frame, the adjacent ends of members of the angular portions having obliquely outwardly extending lugs, a stud carried by one of each adjacent pair of lugs and projecting transversely of, and beyond the other lug, and having a lever-provided cam pivotally connected thereto, whereby by the operations of the cams at the diagonally opposite corners the separable portions of the flask may be brought to contracted relations or released to spread from each other, and springs for automatically spreading the angular portions of the flask when released therefor by the cams.

2. A flask comprising a pair of right angled portions arranged to form the boundaries of a rectangle, the adjacent ends of members of the angular portions having obliquely outwardly extending lugs, one of each having an aperture therethrough, while the other carries a stud projecting through and beyond such aperture, and having a lever-provided cam pivotally connected thereto, and arranged for impingement against the surface of the apertured lug, and springs in compression between the obliquely extending lugs of both pairs.

3. A flask comprising a pair of right angled portions arranged to form the boundaries of a rectangular flask frame, the adjacent ends of members of the angular portions having obliquely outwardly extending lugs, a stud carried by one of each adjacent pair of lugs, projecting transversely of, and beyond the other lug, and having a lever-provided cam pivotally connected thereto, springs between the pairs of corner lugs, exerting a separating pressure thereto, and a guard wall carried at the upper part of one lug of each pair and overhanging the other lug.

4. A flask comprising a pair of right angled portions arranged to form the boundaries of a rectangle, the adjacent ends of members of the angular portions having obliquely outwardly extending lugs, a stud carried by one of each adjacent pair of lugs projecting transversely of and beyond the other lug and a lever having a bifurcated inner extremity forming a two leaf cam embracing and pivotally connected to the extremity of each stud next outside of the lug, and springs interposed between the lugs of each pair, exerting a separating pressure thereto.

5. In combination the drag and cope sections of a flask, one having opposite outwardly extending apertured guide plates and the other having outstanding at its oppo-

site sides vertical guiding dowels and one of said flask sections comprising a pair of right angled portions having rectangular arrangement, the adjacent ends of their members having obliquely outwardly extending lugs, one of each having an aperture therethrough while the other carries a stud projecting through and beyond such aperture and having a lever provided cam pivotally connected thereto arranged for coaction with the adjacent oblique lug, springs for automatically spreading the angular portions of the flask,—the apertures in the said guide plates having the lengths thereof arranged in oblique lines corresponding to the lengths of said studs.

Signed by me at Springfield, Mass., in presence of two subscribing witnesses.

E. T. McHUGH.

Witnesses:
G. R. Driscoll,
Wm. S. Bellows.